

CLAIMS

1. A vessel for travelling on water, comprising a hull means and a keel comprising a member depending from the hull means, the member comprising two limbs each depending  
5 from a respective lateral side of the hull means, the two limbs defining at least in part an enclosed flow path extending in a bow to stern direction, the enclosed flow path being configured to allow water incident on the vessel to flow over inner and outer surfaces of the limbs,  
10 characterised in that the limbs each have a zero-lift surface which is angled to generate in use a component of hydrodynamic force directed away from the enclosed flow path.
2. A vessel according to claim 1, wherein at least one  
15 limb comprises a portion having a symmetrical foil section.
3. A vessel according to claim 1 or claim 2, wherein at least one limb comprises an asymmetric foil section.
4. A vessel according to any of the preceding claims, wherein the angle of the zero-lift surface of at least one  
20 limb is variable.
5. A vessel according to claim 4, wherein at least one limb is of variable camber.
6. A vessel according to claim 5, wherein at least one limb comprises a moveable flap.
- 25 7. A vessel according to claim 5, wherein a portion of at least one limb is moveable.
8. A vessel according to any of the preceding claims, wherein the two limbs each comprise a substantially

straight portion.

9. A vessel according to claim 8, wherein the member comprises a pair of substantially straight limbs connected together to form a V-shape as viewed with a portion of the hull means completing the loop to form the enclosed flow path.

10. A vessel according to any of claims 1 to 7, wherein the two limbs are substantially curved.

11. A vessel according to any of the preceding claims, wherein the two limbs are symmetrically disposed on either side of a central, longitudinal axis of the hull means.

12. A vessel according to any of the preceding claims, wherein the two limbs are directed inwards toward the hull means where they depend from the hull means.

13. A vessel according to claim 12, wherein the two limbs are substantially perpendicular to the hull means at the point where they meet the hull means.

14. A vessel according to any of the preceding claims, wherein the keel further comprises a ballast portion.

15. A vessel according to claim 14, wherein the keel comprises a ballast bulb disposed at a lowest part of the keel.

16. A vessel according to any of the preceding claims, wherein at least one limb of the keel has a part having a sharp or small radius leading-edge.

17. A vessel according to any of the preceding claims, wherein at least one limb has a part having a leading edge which is locally swept relative to a central, longitudinal

axis of the hull means.

18. A vessel according to claim 17, wherein longitudinal distance between the leading edge of the part and a rearmost part of the hull means decreases with increasing  
5 distance from the hull means.

19. A vessel according to any of the preceding claims, wherein each limb has a lower part which is longitudinally offset relative to an upper part thereof.

20. A vessel according to claim 19, wherein the lower  
10 portion of each limb is offset relative to the upper part towards a front part of the hull means.